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EXAMINER
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TSOY, ELENA

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1762

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/873,714  
Filing Date: June 04, 2001  
Appellant(s): AWOKOLA ET AL.

**MAILED**  
JUL 14 2006  
**GROUP 1700**

Hilmar Fricke and Jeffrey Saran  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed May 18, 2006 appealing from the Office action mailed January 5, 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,531,188	MAAG ET AL	3-2003
5,091,211	RICHARD	2-1992
5,700,576	BREHM ET AL	12-1997
DE19757082A1	MAAG ET AL	6-1999
WO 99/26733	MAAG ET AL	6-1999

### (9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3, 6, 10, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maag et al (DE-A-197 57 082 or WO 99/26733) in view of Richard (US 5,091,211).

The Examiner Note: since DE-A-197 57 082 and WO 99/26733 (in German language) and US 6,531,188 are of the same patent family, the Examiner will refer to English text of US 6,531,188 to Maag et al.

Maag et al disclose all steps recited in claim 1 such as: a) applying to *optionally* pre-coated metal or plastic surface (See column 2, lines 11-15) a surfacer (filler) coating composition for automotive repair lacquering (See column 5, lines 29, 37) comprising solvent-free composition having 100 % solids content comprising (See column 2, lines 47-49) as a binder (claimed component A) constituted by a prepolymer having molecular mass of 200-10,000 and containing on average 2 to 20 olefinic double bonds per molecule such as polyurethane methacrylates (See column 3, lines 1-12) and a reactive diluent (claimed component B) in an amount of 1 to 50 wt. % with reference to the total weight of the polymer and reactive diluent (See column 3, lines 13-18), e.g. monosaturated ester of methacrylic acid (See column 3, lines 19-20), and a chemically crosslinking binder (See column 4, lines 29-40), b) curing the applied surfacer coating composition by irradiation with high energy radiation (See column 2, lines 40-49); c) applying a top coat layer comprising a color-imparting and/or special-effect-imparting base lacquer layer and a transparent clear lacquer layer, or a top coating comprising a pigmented one-layer top lacquer (See column 2, lines 17-18) to the cured spacer (filler) layer and curing the top coat layer (See column 7, lines 62-65).

Note that methacrylic acid ester or methacrylate is a reaction product of methacrylic acid and alcohol by definition of ester. In other words, the methacrylic acid ester reactive diluent of Maag et al is a reaction product of methacrylic acid and alcohol. Since Maag et al do not limit their teaching to any particular alcohol, reactive diluents of Maag et al would include reaction products of methacrylic acid and any type of alcohol including *any cycloaliphatic* alcohol as long

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as they are in a liquid form and capable of diluting the prepolymer binder of Maag et al such as low molecular mass, e.g. around 200 (i.e. liquid), *cycloaliphatic* methacrylate (i.e. an ester of methacrylic acid and *cycloaliphatic* alcohol) of Maag et al because it is a *liquid* and *mixes well* (i.e. capable of diluting) with the prepolymer (See column 3, line 12) of Maag et al. Therefore, a reaction product of methacrylic acid and monohydric *cycloaliphatic* alcohol would be an obvious choice for the monosaturated methacrylic acid ester reactive diluent of Maag et al in the absence of showing of criticality. Since the Declaration of Loffler filed on 11/07/2005 fails to show criticality of *cycloaliphatic* methacrylic acid ester over non-cycloaliphatic methacrylic acid ester, a liquid monosaturated ester of methacrylic acid and cycloaliphatic alcohol stand being an obvious choice for the reactive diluent of Maag et al.

Maag et al fail to teach that the surfacer (filler) coating composition comprises at least one compound having at least one phosphoric acid group and at least one free-radically polymerizable double bond (Claim 1) such as methacryloyl-modified phosphoric acid derivative (Claim 10) in an amount of 2-10 wt. % (Claim 1).

Richard teaches that addition of a compound having phosphoric acid group and a double bond such as monoester or diester of phosphoric acid having acryloyl or methacryloyl groups (See column 2, lines 10-15, 37) to a radiation curable coating composition comprising acrylourethane (polyurethane acrylate) and reactive free-radical polymerizable monomers (See column 1, lines 45-50) provides strong adhesive bond of the coating to metal and plastic substrates (See column 1, lines 57-60). The amount of the monoester or diester of phosphoric acid included in the coating composition will vary depending principally upon the particular monoester or diester selected but will always be an effective amount sufficient to improve the bonding strength of the composition (See column 2, lines 54-59). Generally, this amount falls in the range of 0.5 to 10% by weight of the total coating composition (See column 2, lines 59-61).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a compound having phosphoric acid group and a double bond such as monoester or diester of phosphoric acid having acryloyl or methacryloyl groups in an amount of 0.5 to 10 wt % to a radiation curable surfacer coating composition of Maag et al with the expectation of providing the surfacer coating composition with the desired strong adhesive bond of the coating to metal and plastic substrates, as taught by Richard.

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It is the Examiner's position that the surfacer coating composition of Maag et al in view of Richard would produce no edge marks because the coating is produced by substantially identical processes using substantially identical composition. It is held that where the claimed and prior art products are produced by identical or substantially identical processes, claimed properties or functions are presumed to be inherent. See MPEP 2111.02, 2112.01. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Also, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maag et al in view of Richard, further in view of Brehm et al (US 5,596,043).

Maag et al in view of Richard, as applied above, fails to teach that cycloaliphatic alcohols include isobornyl methacrylate.

Brehm et al teach that monofunctional reactive thinners, such as isobornyl methacrylate (See column 5, line 59) may be used in combination with acrylic prepolymers (See column 4, lines 5-13) in a radiation curable coating composition (See column 7, lines 14-25) for coating automobile parts (See column 6, lines 33-35, 42) to provide good flow properties of the coating composition and thereby good processibility (See column 5, lines 50-53).

It is held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) (selection of a known plastic to make a container of a type made of plastics prior to the invention was held to be obvious); *Ryco, Inc. v. Ag-Bag Corp.*, 857 F.2d 1418, 8 USPQ2d 1323 (Fed. Cir. 1988).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used methacrylates of cycloaliphatic alcohols such as isobornyl methacrylate as methacrylatereactive thinner in Maag et al in view of Richard for the use in automotive coatings since Brehm et al teach that monofunctional reactive thinners, such as isobornyl methacrylate is suitable for the use in a radiation curable coating composition in combination with acrylic prepolymers.

#### **(10) Response to Argument**

Applicants' arguments filed 5/18,2006 have been fully considered but they are not persuasive.

(A) Applicants argue that there is no disclosure or suggestion in Maag et al to use a reactive diluent that is a methacrylic acid ester being formed by reacting methacrylic acid with at least one cycloaliphatic alcohol, as is required by Applicants' Claim 1 invention. Further, the working example in Maag et al uses hexanediol diacrylate as the reactive diluent. Hexanediol diacrylate, however, is simply not a methacrylic acid ester being formed by reacting (methacrylic acid with at least one cycloaliphatic alcohol).

The argument is unconvincing because Maag et al teach that a monosaturated methacrylic acid ester may be used as a polymerisable liquid reactive diluent (See column 3, lines 18-20). Note that methacrylic acid ester or methacrylate is a reaction product of methacrylic acid and alcohol by definition of ester. Maag et al do not limit the methacrylic acid ester to specific alcohols. Therefore, a monosaturated methacrylic acid ester Maag et al may be *broadly* interpreted as a reaction product of methacrylic acid and any type of monohydric alcohol including cycloaliphatic alcohol as long as the reaction product is a liquid and is capable of diluting the prepolymer binder of Maag et al. The low molecular mass, e.g. around 200 (i.e. liquid) *cycloaliphatic* methacrylate (i.e. a reaction product of methacrylic acid and *cycloaliphatic* alcohol) of Maag et al would be an obvious choice because it is a *liquid* and *mixes well* (i.e. capable of diluting) with the prepolymer (See column 3, line 12) of Maag et al. Therefore, a reaction product of methacrylic acid and monohydric *cycloaliphatic* alcohol would be an obvious choice for the monosaturated methacrylic acid ester reactive diluent of Maag et al in the absence of showing of criticality.

Declaration of Loffler filed on 11/07/2005 to show criticality of *cycloaliphatic* methacrylic acid ester of claimed invention over non-cycloaliphatic methacrylic acid ester of Maag et al by comparing coating composition of claimed invention comprising isobornyl methacrylate of claim 8 as a component B with two coating compositions of Maag et al in view of Richard, one comprising 2-hydroxy ethyl methacrylate as a component B, and another comprising methyl methacrylate as a component B, fails to do so for the following reasons:

two main errors occurred in the Declaration: (i) isobornyl methacrylate chosen by Declaration for comparison with diluents of Maag et al was claimed separately in claim 8 and was rejected over Maag et al in view of Richard in view of Brehm; (ii) claim 1 recites *broadly* ester of methacrylic acid with *any* cycloaliphatic any non-cycloaliphatic alcohol. Therefore, comparison should have been made between diluents differing only in structure: for example, hexyl alcohol with cyclohexyl alcohol.

Note that **isobornyl** acrylate, butyl acrylate, 2-ethyl hexylacrylate, octyl acrylate, etc. and their **methacrylate** analogues are reactive monomer solvents which constitute components of conventional curable compositions, as evidenced by US 6340733 to Slark et al (See column 4, lines 34-42). Art, therefore, does not make *any distinction* between aliphatic and cycloaliphatic alcohols.

Moreover, Applicants' own disclosure also does not make *any distinction* between aliphatic and cycloaliphatic alcohols (See specification, page 3, lines 35-36): for example, the specification describes that **methyl methacrylate** reactive diluent (See specification, page 4, lines 4-5) can be used as well as isobornyl methacrylate diluent (See specification, page 4, lines 10-11).

Thus, **the Declaration contradicts Applicants' own disclosure by showing inoperability of their own invention concerning methyl methacrylate reactive diluent.**

(B) Applicants argue that the Examiner has incorrectly characterized Richard as disclosing that the addition of a compound having a phosphoric acid group and a double bond such as methacryloyl-modified phosphoric acid derivative to a radiation curable coating composition comprising acrylourethane and reactive free-radical polymerizable monomers "provides strong adhesive bond of the coating to a metal substrate". July 23, 2004, Non-Final Office Action at page



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4, 3rd paragraph. Richard is, in fact, directed, to an improvement in coating of synthetic plastic substrates (see column 1, lines 55-60).

The Examiner disagrees. Even if the Applicants' statement is true, i.e. a composition without methacryloyl-modified phosphoric acid derivative has a strong bond to metal substrates, the addition of the phosphoric acid derivative would make the bond stronger, as well known in the art and as is implied by Richard.

(C) Applicants argue that Maag et al. cannot be combined with Richard to produce Applicants' claimed process. Richard is directed to the manufacture of vinyl floor and wall coverings and teaches the use of methacryloyl-modified phosphoric acid derivatives in UV curable topcoats. These topcoats are based on acrylated polyurethanes with improved adhesion of topcoats on vinyl resin layers, preferably in the form of vinyl floors. One of ordinary skill in the art would not combine Maag et al. with a document directed towards vinyl floor and wall coverings to produce a process directed at coating metal substrates.

The argument is unconvincing. Richard is directed to a method for improving the adhesion between vinyl resin layers, *such as* are used as the wear layer on vinyl floor and wall tile, and acrylate urethane topcoats (See column 1, lines 6-10). In contrast to Applicants statement, vinyl floor and wall coverings are just *examples* of use of the resin layer. Both Maag et al and Richard apply coating compositions based on polyurethane methacrylate binder and unsaturated reactive diluent on metal or plastic surfaces. Therefore, one of ordinary skill in the art would combine Maag et al. with a document directed towards improvement of adhesion of coatings to metal or plastic surfaces.

(D) Applicants state that Applicants have determined that the lack of edge marks at the point of contact between the OEM coating and the repair coating are unexpected or surprising results. This unexpected result was found when components A and B were within the stated ranges in amended claim 1, such that there were no visible internal or external edge marks. As evidence of such a finding, please refer to Examples 1, 2, and 3 as well as the "Presentation of coating results," wherein a damaged OEM coating (coated onto sheet steel) was repaired such that the

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coating was sanded back to the steel substrate and when repaired, it exhibited no internal or external edge marks. Outside of the defined ranges for components A and B, however, it would be difficult to avoid the presence of edge marks on overcoating with topcoats while maintaining a balance between satisfactory flow and good stability. For example, in the instance where component B would be decreased below the lower limit of 40%, and therefore, component A is increased to an amount above 60%, adhesion problems would result between the substrate and the repair coating. It would also lead to reduced sandability, thereby resulting in edge marks when overcoating with topcoats. Moreover, another consequence would be a decrease in its flow capabilities, wherein the balanced properties of the present invention would be compromised. Neither Maag et al. nor Richard disclose the unexpected advantage cited herein or the ranges utilized with the present invention as set forth in the amended claims.

First of all, the surfacer composition of Maag et al in view of Richard has components in amounts overlap claimed ranges. Secondly, Applicants have no example or any other evidence showing results of outside of the defined ranges for components A and B to prove *unexpected* results of claimed ranges.

As to Declaration further establishing unexpected results – see above.

(E) Applicants state that there is no motivation or suggestion to combine Brehm et al. with Maag et al. and Richard. Brehm et al. is directed to scratch-resistant coatings for plastic articles. Indeed, the word "metal" is mentioned once in the entire disclosure of Brehm et al., and only to note that "there is no expectation that thermoplastically deformable plastics will achieve the scratch-resistance of most metals or mineral glasses" (column 1, lines 16-18). On the other hand, the claimed invention is directed the application of a filler coating composition to a metal substrate (see step a of claim 1).

The Examiner respectfully disagrees with this argument. Brehm et al is a secondary reference which is relied upon to show that monofunctional reactive thinners, such as isobornyl methacrylate (See column 5, line 59) may be used in combination with acrylic prepolymers (See column 4, lines 5-13) in a radiation curable coating composition (See column 7, lines 14-25) for coating automobile parts (See column 6, lines 33-35, 42) to provide good flow properties of the coating composition and thereby good processibility (See column 5, lines 50-53).

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Thus, plastics or metal substrate are irrelevant. One of ordinary skill in the art would have reasonable expectation of success of using teaching of Brehm et al in Maag et al. and Richard to provide good flow properties of the coating composition and thereby good processibility because Maag et al. and Richard do not limit their reactive diluents to specific cycloaliphatic methacrylates.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Elena Tsoy  
Primary Examiner  
Art Unit 1762  
June 30, 2006


ELENA TSOY  
PRIMARY EXAMINER  
*ETsoy*

Conferees:

Timothy Meeks



Glenn Caldarola



Glenn Caldarola  
Supervisory Patent Examiner  
Technology Center 1700